



# WHEELER RIDGE-MARICOPA WATER STORAGE DISTRICT

12109 Highway 166, Bakersfield, CA 93313-9630

Telephone: 661.858.2281 ♦ Fax: 661.858.2643 ♦ Water Orders: 661.858.2296  
www.wrmwsd.com

WM A. TAUBE  
ENGINEER-MANAGER

April 6, 2011

ROBERT J. KUNDE  
ASST. ENGINEER-MANAGER

MARK E. GARDNER  
CONTROLLER

by email - to Baryohay Davidoff at [baryohay@water.ca.gov](mailto:baryohay@water.ca.gov)

Baryohay Davidoff  
California Department of Water Resources  
Office of Water Use, Efficiency & Transfers  
901 P Street  
Sacramento, CA 95814-3515

**Subject: Comments on Proposed Regulation §597 - Agricultural Water Measurement  
Under Title 23, Div. 2, Ch. 5.1, Article 2.**

Dear Mr. Davidoff:

Wheeler Ridge-Maricopa Water Storage District (District) is a public agency and Member Unit of the Kern County Water Agency, and relies on the State Water Project for its primary water supply. It delivers irrigation water under water service contracts to 72,074 acres of farm lands in Kern County, and can provide such water for up to an additional 18,000 acres of farm lands when water supplies are sufficient. It operates and maintains nearly 300 miles of pipelines, 137 booster pumps, 18 water wells, over 700 water meters and 7 miles of concrete-lined canal. The District has been 100% metered for both water supplies and deliveries to its agricultural customers since it commenced water deliveries in 1971. In addition to supplying irrigation water to farms, the District manages local groundwater and participates in three groundwater banking projects to supplement State Water Project supplies.

As a general principle, and independent of the proposed regulation, the District maintains that existing vested economic interests already ensure an effective oversight mechanism for validating water measurement accuracy. The District's customers pay the District for every acre-foot delivered to them, so individual customers have a vested interest to ensure the meter does not register more water than is actually delivered. Conversely, because the District's revenue comes from volumetric sales to customers, the District has a vested interest to ensure the meter does not register less than is actually delivered. Dedicated District staff monitor water deliveries on a daily basis and are sensitive to circumstances that could indicate under metering e.g. flow rates less than historic or ordered flows. Our customers are equally sensitive to circumstances that could indicate over metering e.g. more water metered than their water orders. Furthermore, the District allows its customers to question the accuracy of a metered turnout at any time with the understanding that the District will pay an independent calibration test if the meter is out of compliance, and the customer will pay those costs if the accuracy of the meter is within the manufacturer's specifications.

In general, the District supports the development of guidelines for implementation of locally cost-effective agricultural water measurement. The District hereby submits comments on the Proposed Regulation, and

recommends the changes described below. Please note that these comments are based upon the "DRAFT WATER MEASUREMENT REGULATION" dated March 18, 2011.

**Section §597.4(a).** This section requires clarification. The District operates and maintains over 700 propeller type meters to serve 90,000 acres of irrigated farm lands. At the time of installation, all of these met the requirements of §597.4(a)(i) and §597.4(a)(ii). Since these meters are used for volumetric billing of water to its customers, the District has an active monitoring, repair, replacement and accuracy verification program. The accuracy verification is implemented by comparing the District's aggregate metering records to upstream metering conducted by DWR (using venturi rather than propeller meters - a different device type). Such comparisons are made monthly and consistently show values within the metering accuracy standards described in §597.3(a). Such comparisons effectively test 100% of the District meters in use in a given month (rather than 10% of meters over a year). This achieves a much higher standard than contemplated in §597.3(a). Therefore, the District has an effective accuracy verification system already in place that far exceeds the intent of §597.4(a)(iii). However, it could be argued that because the District does not perform individual field meter tests as suggested in §597.4(a)(iii), it would not comply with said section. Therefore, §597.4(a)(iii) should read as follows (*added language in italics*):

"(a)(iii) Existing device or type of device – for compliance under §597.3(a) above (measurement at the points of delivery to customers), field testing of a statistically representative sample of existing device types or of an individual device shall be performed by individuals trained in the use of field testing equipment. It is recommended the sample be no less than 10% of existing devices, but not to exceed 100 individual devices for any particular device type. If, during the testing of sampled devices, more than one quarter of the devices tested do not meet the criteria pursuant to §597.3(a), the agricultural water supplier must test an additional 10%, not to exceed a total of 200 individual devices for any particular device type. Devices that do not meet the criteria shall be subject to corrective action of section 597.4(b). *Field testing wherein the aggregate accuracy of multiple devices can be verified via comparison with a set of upstream or downstream devices may be used to identify compliance provided that all farm gates within the reach being evaluated are metered.*"

It is also noted that the District's situation with respect to dual metering is not universal. The fact the District can meet a higher standard than proposed in the regulation should not set any precedent for what that standard should be. The appropriate standard is critically dependent on various factors including whether the standard is locally cost-effective. The District supports the standard in California Water Code §531.10 (b) which should be included or referenced in the proposed regulation: "*Nothing in this article shall be construed to require the implementation of water measurement programs that are not locally cost effective.*"

**Sections 597.4(a)(iii) and 597.4(b).** The two references to "frequency of [device] testing" in §597.4(a)(iii) and §597.4(b) require deletion. These references require such frequency to be "...according to best professional practices". But such practices can be subjective and vary with time, location, local conditions, and cost. And who should make these judgements? It is easy to envision a compliance regulator in Sacramento with little or no knowledge of local conditions deciding the District is not compliant to §597 because its frequency of testing does not meet his or her perception of the "best practices" standard. For example, a future standard could call for annual propeller meter calibrations. Based on my twenty-four years of experience as a Registered Agricultural Engineer, this frequency is excessive if a good maintenance program is implemented and water conditions are not extreme.

Furthermore, the District is simply not going to test over 700 of its propeller meters annually at a cost of \$1.4 million (700 meters X \$2000 per meter test as estimated by the Irrigation Training and Research Center at Cal Poly) because someone else thinks it is required "according to best professional practices". For comparison, the District's 2011 total materials and supplies budget is about \$3.0 million for operation and maintenance of nearly 300 miles of pipelines, 137 booster pumps, 18 water wells, over 700 water meters and 7 miles of concrete-lined canal. It is highly unlikely the District's elected Board of Directors would authorize expenditures of an additional \$1.4 million for meter accuracy testing that is obviously unreasonable, unwarranted, impractical, cost prohibitive, and, as described above, unnecessary.

The District understands the current draft regulations call for some representative sample of turnouts tested in a given year to satisfy accuracy standards. Our concern is what a "worst-case" future interpretation of best practices may be that could call for all meters to be tested in a given year. Therefore, in order to prevent arbitrary findings regarding best practices for testing frequency, such frequency determinations should be left to the judgement of the public agencies responsible for the equipment. The relevant sections should be revised as follows:

§597.4(a)(iii). "The results of field tests must be reviewed and certified by a registered Professional Engineer. Water measurement device testing protocols ~~and frequency of testing~~ shall be according to best professional practices."

§597.4(b). "All measurement devices, shall be correctly installed, maintained, operated, inspected, and monitored as described by the manufacturer, laboratories or individuals certifying the device and pursuant to best professional practices. Water measurement device testing protocols ~~and frequency of testing~~ shall be according to manufactures or design specifications and following best professional practices."

**Section 597.2(3).** The definition of "Best professional practices" requires clarification. For example, §597.4 states:

"The results of field tests must be reviewed and certified by a registered Professional Engineer. Water measurement device testing protocols and frequency of testing shall be according to best professional practices."

The obvious question is who determines what are the best practices applicable to a particular situation? §597 clearly contemplates that a registered Professional Engineer should do so. Again, local conditions and costs must form a part of such determination. Therefore, the definition of "Best professional practices" should be revised as follows (*added language in italics*):

3) "Best professional practices" means practices attaining and maintaining accuracy of measurement and reporting devices and methods as described in this article *and as determined by a registered Professional Engineer.*"

Baryohay Davidoff, DWR  
April 5, 2011

**Conclusion.** The Department should revise the proposed regulation in accordance with the comments, and for the reasons stated, above.

If questions arise, please call me at extension 21.

Sincerely,

A handwritten signature in black ink, appearing to read "Robert J. Kunde". The signature is fluid and cursive, with the first name "Robert" and last name "Kunde" clearly distinguishable.

Robert J. Kunde, P.E.  
Engineer-Manager

cc: File 5.1.13 -- (filename I:\Shared\_SN\SBx7-7\_WRM\_Comments\_v3.wpd)